

Digital threads for consumer goods manufacturers

Managing information across
the customer value chain



A transformative concept gaining traction in manufacturing is the creation of a digital thread—a game-changer across a product's lifecycle. This comprehensive approach involves infusing intelligence into products through a unique identity and tracking them throughout their entire journey, from inception to disposal. The advantages of implementing a digital thread are far-reaching, including improving supply chain operations, boosting consumer confidence, and enhancing regulatory compliance.

This paper explores how the digital thread is a key component of product provenance, traceability, connected packaging, and environmental, social, and governance (ESG) considerations within the Consumer Goods industry.

Industry backdrop

Leading manufacturers are investing in digital threads to address key business challenges tied to the complexity of global supply chains and increase the pace of innovation and product development to stay competitive.

Modern supply chains often involve numerous decision makers, suppliers, and partners across the globe. Managing this complexity manually can lead to inefficiencies, delays, and increased risk of errors. Digital threads provide a seamless and integrated view of the entire product lifecycle, from design and manufacturing to distribution and maintenance. By connecting data and processes in a digital thread, manufacturers can enhance visibility and collaboration across the supply chain, improving operational efficiency.

Staying ahead of the competition requires the ability to quickly adapt to market demands and incorporate new technologies. Digital threads enable manufacturers to streamline product development by facilitating real-time communication and data sharing between different stages of the lifecycle. This interconnected approach enhances collaboration between design, engineering, and production teams, accelerating the time-to-market for new products.

Additionally, the increasing demand for customization and personalization in manufacturing presents a significant challenge. Consumers today expect products to meet their

unique preferences, leading to a shift from mass production to more personalized manufacturing processes. Digital threads allow manufacturers to efficiently manage the complexity of customized production by enabling the seamless flow of information from initial design specifications to the final product.

This improves customer satisfaction and helps manufacturers respond more effectively to changing market trends and individualized consumer preferences. Overall, investing in digital threads is a strategic response to these challenges, providing manufacturers with the tools to navigate a dynamic and competitive business environment.

OpenText vision: Transforming agility, efficiency, and customer satisfaction

The digital thread is not merely a technological evolution, but also a cultural shift towards transparency. As consumers increasingly demand visibility into the production processes and ethical practices of the brands they support, the digital thread becomes a strategic imperative. Manufacturers that embrace this cultural shift position themselves as pioneers in a new era of conscientious consumption.



The digital thread, essentially a virtual representation of a product's lifecycle, plays a transformative role in enhancing efficiency, agility, and customer satisfaction. At the heart of a consumer goods manufacturer's operations, the digital thread seamlessly integrates disparate stages of the product lifecycle, from conceptualization and design to production, distribution, and even post-sale customer interactions.

In an industry where innovation is paramount, this interconnected digital framework facilitates real-time collaboration among cross-functional teams, fostering a culture of creativity and responsiveness. Design modifications can be swiftly communicated to production units, ensuring that the final product aligns with evolving consumer preferences and market trends.

For health, beauty, and luxury brands, the digital thread offers a heightened level of traceability and transparency. Manufacturers can meticulously track and document every step of the production process, from the sourcing of premium materials to the intricacies of craftsmanship. This transparency not only ensures adherence to stringent quality standards but also serves as a powerful marketing tool, allowing brands to communicate their commitment to excellence to discerning consumers.

The digital thread also empowers consumer goods manufacturers to optimize their supply chain networks. Predictive analytics and real-time data insights enable companies to anticipate demand fluctuations, streamline inventory management, and minimize the risk of overstock or stockouts. In an industry where timely delivery and product availability are critical, this level of supply chain optimization directly translates into improved customer satisfaction, brand loyalty, and ultimately, sustained profitability.

The digital thread is not merely a technological advancement for consumer goods manufacturers in the health, beauty, and luxury market; it is a strategic imperative. As businesses seek to stay ahead in a competitive landscape, embracing the digital thread is akin to weaving a tapestry of innovation, efficiency, and customer-centricity. Those who successfully leverage this digital continuum are poised to not only survive but thrive in an industry where adaptability and precision are the hallmarks of enduring success.

Product provenance: The cornerstone of integrity

In the intricate web of globalized supply chains, product provenance stands as the first line of defense against a myriad of challenges. The ability to trace a product back to its origins ensures not only the authenticity of the final product, but also compliance with ethical sourcing standards. Technologies such as blockchain and radio-frequency identification (RFID) play a pivotal role in creating an immutable record of a product's journey, instilling confidence in consumers and staff alike.

The discerning modern consumer is increasingly concerned about the ethical implications of their purchases. Product provenance, when integrated into the digital thread, becomes a powerful tool for manufacturers to showcase their commitment to ethical sourcing and sustainable practices. This digital transparency not only safeguards a brand's reputation but also aligns with the growing demand for eco-conscious consumption.

Traceability: Navigating the supply chain maze

Traceability, an inherent component of the digital thread, goes beyond mere tracking. It provides manufacturers with real-time visibility into the movement of goods throughout the supply chain. Advanced traceability mechanisms, often facilitated by the Internet of Things (IoT) and cloud computing, enable granular data capture



at every stage of production and distribution. This not only enhances operational efficiency but also empowers manufacturers to make informed decisions and respond swiftly to potential disruptions.

The traceability afforded by the digital thread is a potent tool for risk mitigation. In an environment where product recalls can be catastrophic, the ability to trace and isolate affected products swiftly is paramount. Moreover, traceability fosters a culture of accountability across the supply chain ecosystem. Manufacturers can pinpoint the source of issues, whether they stem from raw materials or production processes, and implement corrective measures promptly.

Connected packaging: Elevating consumer engagement

Connected packaging extends the digital thread beyond the confines of the factory floor and supply chain, creating a direct link between manufacturers and consumers. Smart packaging, equipped with technologies like near field communication (NFC) and quick response (QR) codes, transforms traditional packaging into an interactive medium. Consumers can access a wealth of information about the product by scanning its packaging with their smartphones, fostering transparency, and building trust.

Consumers are inundated with choices, so brands that prioritize transparency and engage them through connected packaging gain a competitive edge. The digital thread, when extended to connected packaging, becomes a tool for brand differentiation. Beyond providing essential information, it opens avenues for storytelling, conveying a brand's values, and building an emotional connection with consumers. This, in turn, fosters brand loyalty in an increasingly discerning market.

ESG considerations: A holistic approach

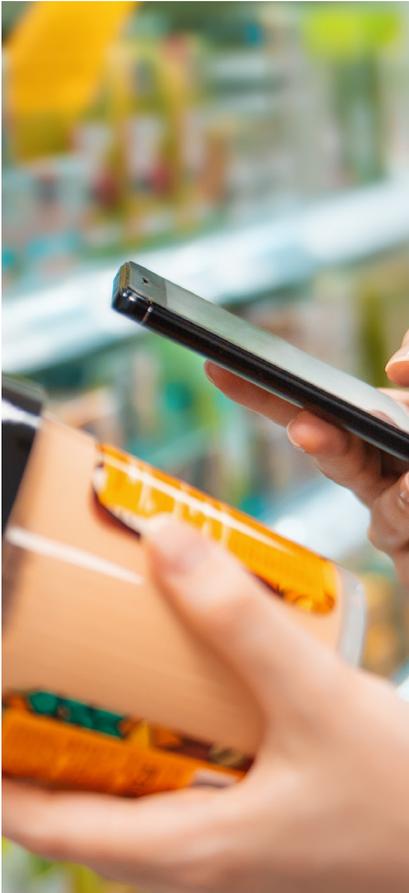
The digital thread serves as a compass for manufacturers navigating the complex landscape of ESG considerations. By leveraging the data captured throughout a product's lifecycle, manufacturers can assess and measure their environmental impact. This includes evaluating the energy consumption, carbon footprint, and recyclability of materials used. The digital thread, therefore, becomes a tool for not just meeting regulatory requirements but proactively addressing environmental concerns.

ESG considerations encompass not only environmental factors but also social and governance aspects. The digital thread facilitates tracking social responsibility metrics, including fair labor practices and community engagement. Manufacturers can demonstrate their commitment to ethical business practices, contributing positively to the communities they operate in. This holistic approach aligns manufacturing operations with broader societal goals, reinforcing the industry's role as a responsible corporate citizen.

Why OpenText

While the benefits of a digital thread are profound, its implementation poses challenges, particularly concerning technological infrastructure. Manufacturers must invest in robust systems capable of seamlessly integrating data across various touchpoints. This necessitates a strategic approach to technology adoption, ensuring compatibility, scalability, and security.

The proliferation of data within the digital thread raises concerns about data security and privacy. Manufacturers must implement robust cybersecurity measures to safeguard sensitive information. Moreover, compliance with data privacy regulations becomes paramount, requiring a meticulous approach to data governance.



The effectiveness of the digital thread relies on collaboration across the entire supply chain. Manufacturers must foster partnerships with suppliers, logistics providers, and other contributors to ensure a unified and standardized approach to data sharing. This collaborative ethos extends to industry-wide initiatives that aim to establish common standards for digital thread implementation.

We would welcome the opportunity to be your strategic partner in your digital thread journey and support you in making your business operations go from smart to smarter with OpenText.

Proposed next steps

Together, let's outline a vision and identify opportunities to quickly improve your operational excellence and key performance indicators. Below are suggested next steps to ensure your operational excellence journey is in lock step with your information management journey.

- **Introductory meeting:** Bring together your OpenText Global Account Director or Senior Account Representative and your company's Account Business Unit President, COO, CTO, or decision maker on operational excellence investments.
- **Joint roadmap exchange:** Hold a day-long information exchange with operations and critical supporting lines of business, such as engineering, supply chain, and IT leaders (Directors and above). OpenText will gather insight about your operational excellence initiatives, current approaches, and obstacles, and provide an overview of information management technologies and best practices that support them.
- **Business Value Consulting workshop:** Engage the OpenText Business Value Consulting team with project teams and supporting lines of businesses to assess current state and quantify the business impact of potential OpenText solutions.



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